Attachment 4a – *Public comments on NOAA Fisheries' Proposed Evaluation and Pending Determination on the Ozette Lake sockeye salmon Resource Management Plan, and NOAA Fisheries' responses to those comments.*

NOAA's National Marine Fisheries Service (NMFS) published notice in the Federal Register of its ESA 4(d) Rule proposed evaluation and pending determination of the Ozette Lake sockeye salmon Resource Management Plan (RMP) on August 1, 2002 (67 FR 49905). The public comment period closed on September 3, 2002. NMFS received a request from the public on September 3, 2002, for additional time for reviewing the draft ESA and NEPA documents. In response, the public review and comment period for the documents was reopened and extended through October 21, 2002 (October 4, 2002, 67 FR 62229).

The notices requested public comments concerning NMFS' proposed evaluation and recommended determination of the RMP and the draft environmental assessment (EA). NMFS has reviewed comments received by the closing dates. During the initial and extended review periods, NMFS received comments on its proposed valuation and recommended determination of the RMP and on the draft EA from one private citizen, the National Park Service (NPS), and the Makah Tribe. Similar comments have been combined where appropriate. Those comments that related directly to the proposed evaluation and pending determination are addressed below. Several of the comments were addressed in NMFS' final 4(d) evaluation and recommended determination and EA documents (Attachments 1 and 3), and in the proposed RMP.

Refer to the decision memorandum for references cited in this attachment.

Comment 1: Two commenters expressed concern about the effects of the proposed RMP on the core listed beach-spawning sockeye salmon population. These concerns include: the RMP will not lead to restoration or significant benefits to the beach-spawning population; the ability to differentiate beach-origin sockeye from hatchery sockeye might be impaired; proposed monitoring of hatchery-origin sockeye adult stray rates to beach spawning areas was inadequate; and, that only the beach-spawning sockeye aggregations should be used for viability assessments.

Response: The draft evaluation document includes NMFS' assessment of RMP effects on the beach-spawning sockeye salmon population. In that document, NMFS clearly distinguishes actions proposed to establish tributary sockeye salmon populations from beach-spawning sockeye population preservation and recovery objectives. Actions are proposed to minimize the risk of effects on the listed beach-spawning population that may occur through artificial propagation in the tributaries, and NMFS considers the actions to be adequately protective. Research, monitoring, and evaluation actions included in the RMP are considered beneficial to beach-spawning sockeye population recovery by improving scientific understanding of listed sockeye salmon abundance, life history strategies, and factors limiting productivity and survival. One such research action is the proposed collection and spawning of up to 10 adult beach-origin sockeye salmon each year to assess survival rates of eggs planted and incubated in Ozette Lake beach spawning areas. To answer concerns regarding adult capture and removal effects on the beach-spawning population, in 2002, the Makah Tribe used non-listed tributary adult fish for these studies instead of beach-origin adult fish. Tributary-origin sockeye eggs incubated in the

beach areas through the study were removed and destroyed after incubation survival rates were assessed. Non-listed tributary-origin, rather than beach spawner-origin, broodstock and eggs may be used to effectuate egg survival studies on the beaches in subsequent years as a measure to minimize take effects on the beach-spawning adult sockeye salmon population.

Monitoring actions proposed to estimate the abundance of the beach-spawning population include continued operation of the Ozette River counting weir, tagging and tracking of adult sockeye escaping into Ozette Lake, mass marking hatchery-origin sockeye juveniles with an otolith mark, marking a representative sample of hatchery-origin sockeye juveniles with an adipose fin clip, operation of an adult trapping weir on Umbrella Creek to census tributary escapement, and continued spawner surveys in beach and tributary spawning areas to count sockeye adults and recover marked fish. These on-going sampling and evaluation actions implemented through the RMP are expected to be sufficient to allow for accurate estimation of listed beach-spawning sockeye salmon adult abundance each year.

Proposed hatchery fish marking, spawning ground survey, and mark recovery actions in the RMP will allow for continued assessment of hatchery-origin sockeye salmon adult stray rates to beach spawning areas. Mark recovery monitoring data provided by the Makah Tribe has indicated that tributary-origin sockeye stray rates to the beaches are not significant (0 marked hatchery-origin fish out of 121 sockeye carcasses examined in 1999 and 0 out of 200 carcasses sampled in 2000).

Information gathered through implementation of the RMP will be used by the co-managers and the Puget Sound/Olympic Peninsula TRT for planning and implementing recovery actions for the listed sockeye salmon ESU. Recovery planning will include an assessment of the viability of the natural-origin beach-spawning sockeye salmon population, which remains the core population for recovery. The TRT may also make recommendations regarding the role in recovery of natural-origin tributary spawning sockeye. However, until such decisions are made, the RMP under review is designed to maintain the beach and tributary-spawning aggregations separately, preserving the beach-spawning population in a natural state, and minimizing genetic and ecological risks posed by the tributary sockeye population establishment program. For the interim period, recent year (1999-2001) spawner escapements for both the beach-spawning and tributary spawning populations appear to be increasing relative to previous years (Figure 2 in the NMFS evaluation document), and impacts from RMP actions (in particular, hatchery-origin sockeye adult stray rates to beach spawning areas) appear to be unsubstantial.

Comment 2: One commenter stated that Olympic National Park should be included in all management and restoration decisions affecting park resources, as it retains exclusive jurisdiction over recreational fishery and resource management within park boundaries. As such, the commenter also stated the Olympic National Park should be considered a resource "co-manager" with the Makah Tribe and WDFW.

Response: NMFS concurs with NPS' important role as a resource management agency in the RMP action area. In recognition of that role, over the past three years, we have helped facilitate NPS' review and comment on early draft versions of the RMP. We have also provided for NPS'

review and comment on early draft versions of the NMFS ESA and NEPA documents subsequently announced for public review. As noted in the NPS comment letter responding to the FRN for the NMFS ESA and NEPA review documents, the final RMP submitted for our review was modified by the co-managers to address many of the concerns previously identified by NPS through the RMP presubmittal review process. It is our understanding that the NPS will continue to be involved through its role as resource manager in reviewing and helping to guide implementation of the RMP as a member of the Lake Ozette Sockeye Salmon Steering Committee.

NMFS applies the term "co-managers" to the RMP action agencies (the Makah Tribe and WDFW) in recognition of their court-mandated status under *United States* v. *Washington* as cooperative managers of the anadromous salmon resource in the case area. Through NMFS' regulatory role for actions affecting ESA listed anadromous fish, we are the Federal agency responsible for insuring that the *United States* v. *Washington* co-managers' proposed RMP is adequately protective of listed Ozette Lake sockeye salmon. NMFS' use and recognition of the term "co-managers" as applied to the Makah Tribe and WDFW, and our direct work with them in evaluating the RMP under the ESA, are not intended to subordinate NPS' role or involvement in Ozette Lake sockeye salmon recovery planning or recovery determinations. Our application of the term recognizes the special standing of the Treaty Tribes and the State of Washington as joint managers of the anadromous fish resource under *United States* v. *Washington* court proceedings.

Comment 3: Two commenters expressed concern regarding potential future actions mentioned in the RMP: hatchery supplementation of the beach-spawning sockeye salmon population if required for recovery; and eventual initiation of sustainable fisheries by the co-managers when the listed sockeye salmon ESU has recovered.

Response: The RMP considered in the NMFS evaluation document does not propose hatchery supplementation of the beach-spawning sockeye salmon population, nor the initiation of any fisheries. Any future proposals regarding these actions will necessitate reinitiation of evaluation and determination processes by NMFS to determine compliance with ESA protective provisions.

Comment 4: Two commenters were concerned with the need for RMP performance standards and indicators that were quantifiable for annual program review purposes.

Response: NMFS concurs that quantifiable performance should be provided where possible. Quantifiable standards and indicators are provided for adult sockeye salmon trapping, tagging, and broodstock removal, and for juvenile fish capture, handling, and hatchery fish release levels proposed in the RMP. However, more information regarding Ozette Lake sockeye salmon status, life history, and limiting factors is first needed before other performance standards and indicators included in the RMP can be quantified. Results from research, monitoring, and evaluation actions proposed in the RMP are expected to improve information regarding adult and juvenile population abundance, natural and hatchery-origin sockeye productivity and survival, and sockeye salmon life history strategies. This information will be used to evaluate standing program performance standards and indicators, and to attach quantifiable criteria when possible.

Comment 5: Two commenters highlighted the need for accountability regarding decisions to modify the RMP using an adaptive management approach based on monitoring, evaluation, and research results.

As described in the evaluation document, it is the intent of the co-managers to adjust the proposed tributary artificial propagation program as necessary based on new information collected through research and monitoring and evaluation to improve its performance, or to reduce any adverse effects on natural-origin sockeye salmon. The program will also be adjusted if it is not assisting in increasing self-sustaining sockeye abundance, in preserving population structure and diversity, or if the program is determined to be unneeded for Ozette Lake sockeye salmon recovery. Accountability for this approach is expected through annual reporting of RMP performance to NMFS for review, and the establishment of a decision-making framework (e.g., the Lake Ozette Sockeye Salmon Steering Committee) for implementing program changes, and to gauge compliance with the plan's adaptive management performance standard.

Comment 6: Two commenters addressed the issue of marine mammal and river otter predation effects on Ozette Lake sockeye salmon. One commenter questioned whether marine mammal predation is an important limiting factor on listed sockeye as identified in NMFS evaluation document, indicating that more information is needed to reach such a conclusion. The commenter was concerned that otter or seal control measures might be proposed as a means to address any sockeye predation impact conclusions. The commenters were also concerned with the potential for sockeye salmon migrational delays at the Ozette Lake counting weir that might lead to increased vulnerability of the fish to predation.

Response: NMFS concurs that more information is needed regarding the role of marine mammal and river otter predation as a limiting factor for Ozette Lake sockeye salmon population survival and productivity. However, available visual observation and scarring rate data reported in the RMP suggests that harbor seal and otter predation may be a significant factor affecting sockeye abundance. Under the RMP, research programs will continue to be implemented to assess predation affects on the migrating and pre-spawning sockeye salmon adult population. This research includes adult sockeye salmon capture and tagging programs to assess mortality rates due to predation in Ozette Lake, monitoring of species and numbers of pinnipeds and river otters preying on sockeye salmon, monitoring of sockeye salmon scarring incidence in the Ozette River, and observations of predation during spawning ground surveys on Ozette Lake beaches. No actions are proposed in the RMP to control marine mammal or otter predation. Any proposal for predator control actions will be subject to a separate environmental impact review process. Further information is needed regarding the possible contribution of the Ozette River fish counting weir to adult sockeye predation by otters and seals. Visual and video monitoring data collected at the weir site may help identify whether the weir is being used on a consistent basis by harbor seals and otters to trap sockeye salmon. For the interim period, NMFS believes that the ability to estimate annual abundances of the migrating Ozette Lake sockeye salmon population through operation of the counting weir outweighs risks potentially associated with mammal predation at the weir.

Comment 7: One commenter expressed concern regarding sockeye adult returns to Crooked Creek, and take effects on returning fish through adult collection proposed in the RMP.

Response: The collection of any returning hatchery-origin sockeye salmon from Crooked Creek has been removed as a proposed action in the RMP by the co-managers. Potential effects of adult fish collection in Crooked Creek are therefore no longer evaluated in the final NMFS evaluation document. The effect of low adult returns resulting from hatchery releases into Crooked Creek is considered in the analysis, with few if any effects anticipated.

Comment 8: The Makah Tribe requested clarification in the NMFS evaluation document regarding juvenile sockeye salmon fed fry release and marking plans proposed for the tributary hatchery programs. They were concerned that the document did not clearly distinguish early fed fry and later fed fry release plans, and did not clearly acknowledge the inability to adipose fin clip sockeye juveniles released at a size smaller than 0.5 grams. Another commenter expressed the concern that tributary-origin sockeye spawner stray rates to beach spawning areas could not be assessed if only a proportion of the hatchery sockeye fry were marked with an adipose fin clip.

Response: The NMFS evaluation document has been revised to more clearly identify sockeye salmon fry release and marking actions proposed in the RMP. All juvenile sockeye salmon released through the tributary hatchery programs will be otolith-marked to allow for their differentiation from natural-origin sockeye upon adult return. Although unfed and early fed fry are too small in size to also be marked with an adipose fin clip, a sufficient proportion of fed sockeye salmon fry releases will be adipose fin clipped to allow for their visual identification. Monitoring of returning adipose fin clipped sockeye salmon adults is expected to allow inseason development of statistically significant estimates of hatchery and natural-origin fish contribution rates at the Ozette Lake counting weir and in natural spawning areas. To refine inseason estimates, carcasses retrieved during surveys in natural spawning areas will be otolith-sampled to determine whether they were of hatchery or natural-origin. Otolith mark-recovery and analysis methods applied are expected to be sufficient to identify the level of hatchery-origin sockeye straying in beach spawning areas.

Comment 9: The Makah Tribe expressed the concern that NMFS did not consider provisions in the evaluation document that would allow for inadvertent mortality of adult sockeye collected as broodstock in Umbrella Creek for use in the proposed tributary hatchery program. They noted that in past consultations, NMFS had set broodstock collection ceilings, but had included an allowance for the potential exceeding of the ceilings by 10% of the total to take into account inadvertent adult salmon capture and holding losses prior to spawning.

Response: NMFS agrees with the request for an allowance for the collection of an additional 20 adult sockeye salmon returning to Umbrella Creek each year (10% of the total proposed collection level of 200 adults) if needed to account for inadvertent losses of broodstock during capture and holding. Proposed juvenile sockeye salmon release levels evaluated in the NMFS document will not be changed as a result of this allowance. The provision to allow collection of

an additional 20 adult fish from the tributary is not expected to result in any substantial additional effects on the core listed beach-spawning population.

Comment 10: The Makah Tribe commented that the NMFS evaluation document should describe and allow for the use of disk-type tags as an alternative to radio and or sonic tags for conducting Ozette Lake sockeye adult lake migration, spawning behavior, pre-spawning survival, and effective beach spawner abundance studies. The Tribe requests that disk-type tags be used to continue and complete the aforementioned studies beginning in 2003; application of disk-type tags to the 200 adults proposed for radio or sonic tagging will allow for positive identification of tagged adult sockeye during hydroacoustic surveys conducted to estimate lake spawner abundance, will be less harmful to tagged fish, and will allow for mark-recapture estimates of pre-spawning mortality.

Response: NMFS concurs, for the stated reasons, with application of disk-type tags as an alternative to radio or sonic tags for conducting the Ozette Lake sockeye salmon adult lake migration, spawning behavior, pre-spawning survival, and effective beach spawner abundance studies proposed in the RMP. NMFS agrees to inclusion of disk tagging for these studies in the RMP, and the use of such tags is now reflected in the NMFS evaluation document.

Comment 11: One commenter was concerned whether the juvenile out-migrant trapping program on the upper Ozette River was being operated in a manner that would exacerbate predation by northern pikeminnow on sockeye salmon juveniles while the two species were held in the trap live box.

Response: Northern pikeminnow predation on sockeye salmon fry captured in the out-migrant trapping program could occur. The RMP describes practices applied to minimize the risk of such predation. Risk minimization measures include removal, sampling, and downstream release of all fish collected in the live box just after dusk each day, and removal of all fish at least every 12 hours of trap operation. These actions are expected to be sufficient to control northern pikeminnow predation in the trap live box.

Comment 12: The Makah Tribe requested that the stated number of sockeye salmon smolts proposed to be captured in the RMP, and therefore considered in the NMFS evaluation, be changed from 5,000 smolts to a range of 5,000 to 10,000 smolts each year. They indicated that this range was needed to enable more precise estimation of trapping efficiency, and total migrating sockeye abundances, during years of low and high smolt emigrations. No changes in the allowable number of sockeye salmon smolts that might be unintentionally injured (250) or killed (150) as a result of the smolt out-migrant trapping program were proposed.

Response: The Makah Tribe's request to allow for sockeye smolt capture, handling, and release levels during operation of the trap to range from 5,000 to 10,000 natural and hatchery-origin fish each year is not expected to result in incidental injury and mortality levels exceeding limits already considered in the NMFS evaluation document. NMFS found that the estimated annual adult fish loss rate due to proposed research actions, including trap operations, is not likely to

impair survival and recovery of the listed beach-spawning sockeye salmon population. The proposed capture, handling, and release range proposed by the Tribe is acceptable. NMFS expects that operation of the trap will be closely monitored to ensure that juvenile sockeye salmon injury and mortality limits previously set to limit trap effects are not exceeded. The co-managers will consult with NMFS inseason to report trapping results. The co-managers will also provide NMFS with annual reports on RMP activities that include estimated impacts of the smolt trap operation on emigrating sockeye salmon. NMFS will meet to discuss annual RMP results with the co-managers and through the Lake Ozette Sockeye Salmon Steering Committee, and will determine if operation of the smolt trapping program remains consistent with Limit 6 of the ESA 4(d) Rule.

Comment 13: One commenter expressed the general concerns that the RMP lacks accountability and thus directly promotes take, and that the RMP promotes a continued disconnect between governmental and private entities in reaching a common goal of sockeye salmon recovery.

Response: NMFS is recommending approval of the RMP under the 4(d) Rule because actions proposed in the plan contribute to conserving the listed sockeye salmon ESU, and are implemented in a manner that adequately limits impacts on the ESU. Compliance with take levels resulting from RMP implementation will be monitored through NMFS' review of annual reports submitted by the co-managers, and through in-season meetings (including those held by the Lake Ozette Sockeye Salmon Steering Committee).

The RMP is proposed as a means to establish self-sustaining sockeye salmon returns in Ozette Lake tributaries, and to collect scientific information beneficial to listed sockeye salmon recovery planning. This information will be used by the Puget Sound/Olympic Peninsula TRT to make independent recommendations regarding sockeye salmon population parameters and conditions needed for recovery of the listed ESU. NMFS expects that the TRT recommendations will be reviewed by state, tribal, local, Federal resource and land managers, and by private citizens, to determine actions that will be implemented to recover Ozette Lake sockeye salmon.

Comment 14: One commenter noted that because specific factors responsible for the decline of the sockeye salmon ESU have not been identified, and that sockeye salmon population status and trend data is incomplete, it is therefore uncertain whether the proposed RMP is needed, or if it will lead to sockeye salmon recovery.

Response: NMFS concurs that factors affecting Ozette Lake sockeye salmon survival and productivity are as yet undefined, and that improved information is needed regarding sockeye salmon population abundance status and trends. Actions proposed in the RMP are specifically implemented to collect and refine this needed scientific information, and thereby improve understanding of limiting factors and population status. As noted in the NMFS evaluation document, research, monitoring, and evaluation programs to collect this information for Ozette Lake sockeye salmon are not being conducted by any other entities, and the ability to make any determinations regarding ESA recovery needs will be impaired without the RMP programs. Although NMFS believes that the RMP will help improve prospects for recovering the listed

ESU, concurrent actions outside of the plan addressing habitat loss and degradation are needed to effectuate population recovery.

Comment 15: One commenter questioned WDFW's involvement in proposing the tributary hatchery portion of the RMP. The commenter also questioned the need to include a lake spawner research program, given that the focus of the proposed hatchery program is to establish self-sustaining adult returns to the tributaries.

Response: Under *United States* v. *Washington*, the Makah Tribe and WDFW are co-managers of the Ozette Lake sockeye salmon resource. Under the Court's ruling, hatchery, harvest, and research actions affecting the population must be jointly agreed by the co-managers. Although the Makah Tribe is the major action agency responsible for implementing hatchery actions proposed in the RMP, the plan has been jointly agreed by the co-managers, and submitted for NMFS review as a joint state/tribal plan under Limit 6 of the 4(d) Rule.

The research, monitoring and evaluation, and hatchery actions, proposed in the RMP carry the common objective of benefitting the recovery of the listed ESU. The co-managers acknowledge in the RMP that the beach-spawning sockeye population is the core population of concern regarding recovery. Research, monitoring and evaluation actions specifically designed to assist recovery planning for the beach-spawning population are therefore appropriately included as one major focus of the joint RMP. The other focus of the RMP - the tributary hatchery program - is not producing fish that are currently considered essential for recovery of the Ozette Lake sockeye salmon ESU. However, establishment of self-sustaining aggregations in the tributaries may still benefit Ozette Lake sockeye salmon population viability, as described in the RMP and in the NOAA. Fisheries evaluation document. Also as described in the RMP, and in the NMFS evaluation document, the tributary hatchery program will be implemented in a manner that does not interfere with recovery of the beach spawning sockeye population.

Comment 16: One commenter questioned designation of the co-managers' plan as an RMP, when it was submitted under the format of a Hatchery and Genetic Management Plan (HGMP).

Response: Under Limit 6 of the ESA 4(d) Rule, take prohibitions do not apply to actions undertaken in compliance with a resource management plan developed jointly by the States and the Tribes under the continuing jurisdiction of *United States* v. *Washington* Federal court proceedings to enforce and implement reserved treaty fishing rights. One provision included under Limit 6 in making a determination for the plan is the need to take comment on how any hatchery and genetic management plan addresses Limit 5 criteria. Under the Rule, a HGMP can therefore be submitted as the co-managers' RMP for describing and receiving ESA authorization for hatchery and associated research, monitoring and evaluation actions. NMFS has included language in its evaluation document to clarify the RMP's consideration under the two 4(d) Rule limits.

Comment 17: One commenter highlighted a perceived inconsistency between the RMP and TRT recovery determinations. Specifically, the commenter stated that the RMP is contingent upon

hatchery supplementation, which runs counter to the TRT's Viable Salmonid Population (VSP) modeling for stock recovery needs, which are directed towards natural-origin populations that are not influenced by hatcheries.

Response: Neither NMFS nor the co-managers propose that the tributary-spawning sockeye salmon aggregations established by the RMP hatchery activities be factored into VSP modeling to determine recovery levels. The beach-spawning sockeye population is the recovery focus, and the TRT's VSP document-based analyses will consider these natural-origin fish only. Hatchery, research, monitoring, and evaluation actions under the RMP are designed to minimize risks to the core population.

Comment 18: One commenter expressed the concern that Quinault-origin sockeye salmon planted in Ozette Lake in the early 1980s did not return to the lake and may have seriously impacted the natural run.

Response: According to fish planting records included in the RMP, 120,000 sockeye salmon eggs from the Quinault River were imported to initiate the Umbrella Creek sockeye salmon release program in 1982. Progeny from this Quinault stock transfer were hatched at Umbrella Creek Hatchery and transferred to a net-pen in Ozette Lake for rearing through release in 1983. Thereafter, only eggs originating from returning Ozette Lake-origin sockeye salmon have been used in the tributary hatchery program. It is acknowledged in the RMP that the genetic effects of the single year release of Quinault stock are unknown. However, genetic analyses data presented in the NMFS sockeye status review document (Gustafson *et al.*, 1997) indicate that Ozette Lake sockeye remain as a distinct population, and are very dissimilar from Quinault Lake sockeye. The release of non-native stock sockeye salmon in 1983 did not appear to lead to the establishment of adult returns with Quinault stock genetic characteristics in Ozette Lake.

Comment 19: One commenter questioned the effectiveness of fish health protocols applied in the RMP to control potential infectious hematopoietic necrosis (IHN) epizootics and to prevent catastrophic losses to the listed beach-spawning sockeye salmon population.

Response: As explained in section 5(i)(D) of the NMFS evaluation document, the Makah Tribe will implement the RMP in compliance with "Salmonid Disease Control Policy of the Fisheries Co-managers of Washington State" protocols. Standard fish health maintenance and hatchery sanitation practices (e.g., those specified in Pacific Northwest Fish Health Protection Committee guidelines) will also be applied. These protocols and practices, developed by regional fish health experts, are rigorous, and are widely accepted and applied throughout the Pacific Northwest. The fish health program will monitor the incidence of infectious hematopoietic necrosis (IHN) virus in adult sockeye collected as broodstock each year, and expressly limit the incidence of this regulated fish pathogen in the artificially propagated egg and fry population. Although the IHN virus is a ubiquitous pathogen in Pacific Northwest sockeye salmon populations, a major objective will be to prevent potential amplification of IHN disease through artificial propagation. The proposed RMP is expected to conservatively safeguard listed sockeye salmon from fish disease impacts.

Comment 20: One commenter was concerned that NPS was not included as part of the disease sub-panel directing responses to the identification of reportable fish pathogens in the artificially propagated sockeye salmon population.

Response: A disease sub-panel comprised of tribal, U.S. Fish and Wildlife Service (USFWS), and WDFW fish health experts will convene seasonally to develop measures for limiting the risk of IHN virus transfer and amplification. The Federal agency representing the U.S. Department of Interior (the overarching agency for the NPS, USFWS, and Bureau of Indian Affairs) on the sub-panel is USFWS, which employs fisheries pathologists responsible for fish disease identification and control for Federally funded hatchery programs. NMFS expects that any interests that NPS may have regarding fish health issues associated with RMP actions will be adequately represented through their interaction with USFWS fish pathology staff serving on the sub-panel.

Comment 21: One commenter questioned the methods and accuracy of adult and juvenile sockeye census techniques proposed under the RMP, and was concerned regarding the lack of sockeye salmon abundance estimates that resulted from absent or poorly applied adult census procedures in past years.

Response: NMFS acknowledges that past adult census techniques applied at the Ozette River counting weir have resulted in variably reliable, and in some cases, unavailable, estimates of the annual number of sockeye salmon spawners entering Ozette Lake. Techniques proposed under the RMP to improve sockeye salmon adult census procedures, including use of a video camera at the Ozette River counting weir to continuously record fish passage over the entire potential span of the run, and operation of an additional counting weir on Umbrella Creek to enumerate tributary spawners and identify marked fish proportions, are expected to substantially improve the accuracy of annual lake and tributary run size estimates.

Emigrating fry and smolt trapping techniques applied in the tributaries and in the Ozette River sample a cross section of the stream area. Total juvenile emigration is extrapolated by applying a trap efficiency estimate, derived through mark recapture findings at the fyke net or inclined plane trapping sites. The proposed methods applied to capture, enumerate, and release tributary-origin fry, and to estimate the total emigrating population size based on trap counts, follow standard protocols applied for other juvenile out-migrant trapping programs in western Washington (e.g., WDFW's juvenile out-migrant trapping work on the Skagit and Cedar rivers (Seiler 2001; Seiler et al. 2001). The methods applied in the RMP are appropriate for sampling emigrating fry and smolts and for estimating the size of the total emigrating juvenile populations.

Comment 22: One commenter requested more information regarding the proposed use of airplanes for recovery surveys, including who approves overflights for that purpose.

Response: The use of airplanes for surveys is no longer included as part of the RMP, and NMFS therefore no longer considers their use in its evaluation.

Comment 23: One commenter contended that high sediment concentrations in Ozette Lake beach spawning areas reported in several studies cited in the NMFS evaluation document may be caused by erosion of lake shorelines, in addition to tributary transport. The commenter identified disruption in natural flow by log jams in the Ozette River as a potential causative factor of lake shoreline erosion.

Response: Sediment samples indicating excessive fine concentrations at levels detrimental to egg survival were collected by the Makah Tribe in known Ozette Lake beach spawning areas. The studies cited in the NMFS document also note high sediment concentration in beach spawning areas. High intensity logging and associated road building leading to excessive sediment loads in Ozette Lake tributaries are identified as potential causes. NMFS acknowledges the need to collect additional information regarding sediment concentrations and sources affecting Ozette Lake spawning beaches. Monitoring proposed in the RMP is expected to improve understanding of sediment concentrations in beach areas and sedimentation effects on beach-spawning sockeye productivity. Habitat management and restoration actions that may be needed to identify and remedy causative factors for the excessive sedimentation on the spawning beaches are outside of the scope of the RMP.

Comment 24: One commenter stated that there is no scientific proof, no data, and no high probability that removal of log jams from the Ozette River in past years adversely affected the quality and quantity of spawning and incubation habitat conditions available to beach-spawning sockeye salmon in Ozette Lake. The commenter also objected to a proposal by the Makah Tribe to examine how the removal of logjams from the Ozette and Big Rivers in the early 1950s may have affected lake level, fluctuations in lake level, and the quantity and quality of salmon spawning and incubation habitat.

Response: NMFS concurs that further studies are needed to define the effects of log jam removal in the Ozette River on the quantity and quality of beach-spawning sockeye salmon spawning and incubation habitat, Ozette Lake levels, and the hydrologic characteristics of Ozette Lake spawning beaches. NMFS' evaluation document has been revised in the appropriate sections to reflect the current state of knowledge regarding log jam removal effects, and the need for more information regarding the standing of logjam removal as a factor for decline of the listed ESU. Results from the study described by the Makah Tribe to evaluate the effects of log jam removal on habitat conditions critical to sockeye salmon survival and productivity will help address identified information gaps.

Comment 25: One commenter questioned whether the listing status of tributary-origin sockeye salmon had changed, given recent court decisions directed at the ESA listing of Oregon Coast coho salmon.

Response: The ESA listing status of tributary-origin Ozette Lake sockeye salmon has not been changed as an outcome of the U.S. District Court ruling in *Alsea Valley Alliance* v. *Evans*. Sockeye salmon juveniles and adults produced through the tributary hatchery program are not considered essential for recovery of the Ozette lake sockeye salmon ESU, and are not listed.

Tributary-origin progeny of naturally spawning hatchery-origin adult sockeye are listed, and protected with the beach-spawning population under the ESA. The ESA listing status of the Ozette Lake sockeye salmon ESU, and of the spawning aggregations comprising the population segment, are in the process of being updated by NMFS using data collected in years since the 1999 listing. An updated listing status recommendation for the ESU should be announced for public consideration in late 2003.

Comment 26: Spawning ground and habitat surveys in beach and tributary spawning areas proposed in the RMP are viewed by one commenter as disruptive to the sockeye salmon population. The lack of identification of measures to minimize effects on sockeye salmon during these activities, and take effects associated with sockeye salmon carcass sampling were also of concern.

Response: The RMP includes habitat surveys to identify the location and condition of extant beach spawning areas in Ozette Lake and spawning ground surveys to enumerate sockeye salmon spawning abundances in beach and tributary areas. The latter surveys include retrieval and sampling of carcasses for biological information and the collection of tissue samples for genetic analysis. These surveys are viewed by NMFS as essential monitoring actions for identifying annual spawning aggregation abundance and distribution in beach and tributary areas. Surveys are conducted by boat, snorkel or foot surveyors periodically in areas used by spawning sockeye. Although spawning sockeye salmon may be startled and seek refuge when surveys occur, any disturbance is temporary, and sockeye spawning success is not likely to be substantially affected. Carcasses collected for biological sampling are returned to the point of removal after the carcass is processed, and no substantial effects on the listed population are associated with this sampling program.

Comment 27: One commenter questioned how expected natural-origin sockeye salmon take levels reported in the NMFS evaluation document for RMP research activities would be enumerated and limited.

Response: As the primary action agency responsible for conducting research proposed in the RMP, the Makah Tribe will enumerate and document takes, including annual fish capture, handling, injury, and mortality levels. Estimates of natural and hatchery-origin sockeye salmon take levels will be assessed by mark recovery observations and expansions; in particular otolith mark analyses. NMFS will monitor annual take levels for compliance through inseason conferencing, and through review of annual reports submitted by the co-managers to document the performance of the RMP. NMFS will reevaluate its 4(d) Rule Limit 6 determination regarding the RMP if monitoring reveals impacts that may affect listed species in a way not previously considered, including injury or mortality levels that are greater than expected. Inseason conferences and annual reporting to allow for NMFS monitoring of the RMP will help ensure that RMP research activities achieve stated objectives, including estimated take levels.

Comment 28: The inadequacy of population status information for kokanee in Umbrella Creek and Big River was of concern to one commenter.

Response: Spawning ground surveys conducted by the Makah Tribe have indicated that, although a few kokanee are observed each year, Umbrella Creek and Big River lack self-sustaining populations of kokanee. The co-managers received funding through the Hatchery Scientific Review Group (HSRG) to conduct research to analyze tissue samples collected from extant *Oncorhynchus nerka* populations, and monitor the genetic composition of all potential populations or sub-populations of Ozette Lake kokanee and sockeye salmon. Fish returning to Umbrella Creek and Big River will be included in this monitoring program.

Comment 29: One commenter was concerned that potential sockeye salmon injury and mortality levels that might inadvertently result from fish handling had not been considered for Ozette River trapping programs. The commenter was also concerned that estimated natural-origin sockeye salmon take levels reported in the RMP for research, monitoring, and evaluation programs could be exceeded due to unforeseen events. The commenter questioned whether the cumulative effects of all listed sockeye salmon takes that may potentially occur through proposed RMP activities, and through other resource management plans that may be implemented concurrently in the action area, were reported in the NMFS evaluation document or had been considered.

Response: The RMP includes operational measures that are applied in research, monitoring, and evaluation programs to minimize the potential for unintentional injury and mortality to listed sockeye salmon. Included in the RMP are measures that limit the likelihood for catastrophic losses during trapping, handling, and sampling activities. NMFS has determined that these measures adequately minimize the risks of incidental fish injury and mortality during handling beyond levels estimated in the RMP. Takes occurring through RMP implementation will be reported to, and monitored by, NMFS to ensure that actual injury and mortality levels for listed sockeye salmon are at or below expected levels.

NMFS agrees with the need to consider the cumulative effects of all components of the proposed RMP. Cumulative mortalities that may result from RMP implementation are reported in the NMFS evaluation document. On page 42, the potential removal of up 10 beach-spawning adult fish per year for egg survival research is evaluated. As reported on page 43, research, monitoring, and evaluation programs proposed in the RMP may lead to the additional mortality of 27 natural beach or tributary-origin, or direct (F1) hatchery-origin, adult sockeye salmon. The proportions of natural-origin (beach-spawning or tributary) and tributary hatchery program-origin fish comprising the estimated 27 incidental adult fish loss total are dependent on annual return levels for each component. Assuming recent year (1999 and 2000) return proportions, approximately one half of the fish, or 14 adult sockeye salmon, may be of listed beach-origin. When added to the 10 sockeye salmon adults that may be removed for egg survival research, 24 adult listed beach-origin fish may be killed through RMP research programs, or 1.68% of the recent year (1996-99) average annual estimated lake spawning population escapement of 1,424. Beach-origin sockeye salmon mortalities that may cumulatively result from RMP research, monitoring and evaluation are low relative to total annual sockeye salmon returns to the lake, and

unlikely to impair survival and recovery of the listed population. The above summary information has been included in the referenced section of the NMFS evaluation document to clarify cumulative research-oriented take levels.

Detailed analysis of other sources of sockeye salmon takes is beyond the scope of the NMFS evaluation, but effects of the proposed RMP activities are explicitly considered within the context of other types of activities currently on-going in the action area.

Comment 30: One commenter questioned NMFS criteria for determining whether mortality levels resulting from RMP research, monitoring, and evaluation actions were a limiting factor to recovery of the ESU. The commenter also questioned NMFS' opinion that anticipated take of listed sockeye salmon was distributed throughout the ESU.

Response:
As noted in the NMFS document, research, monitoring, and evaluation actions have not been identified as factors for decline of the Ozette Lake sockeye salmon ESU. Such information gathering activities are an essential part of efforts that are underway coast-wide to address listed salmon and steelhead population recovery needs. The research, monitoring, and evaluation projects proposed in the RMP will provide information that will enhance the ability of the co-managers, NMFS, and the TRT to make effective, responsible decisions to aid management and rebuilding of the listed sockeye salmon population. The anticipated loss through mortality of 24 adult-equivalent listed beach-origin sockeye salmon that may result from these information gathering efforts is under two percent of the recent year average escapement to the lake. This level of annual loss is not expected to substantially affect prospects for the survival or recovery of the listed beach-spawning population.

A mitigating factor identified by NMFS for the proposed RMP research, monitoring, and evaluation actions is their distribution throughout the Ozette Lake sockeye salmon ESU's freshwater range. The intent was to indicate that the actions are not directed at just one life stage (e.g., only adult fish), or in one critical area (e.g., the spawning beaches) used by listed sockeye salmon. As designed, the proposed activities will allow collection of information for all life stages, while minimizing undue impacts on any one life stage or component of the ESU.